

Whyte Classification System for steam locomotives.

OO	Switcher	Often without tenders, using side or saddle tanks as replacements.
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OOOO	Switcher	Most commonly used in yards to cut long strings of cars.
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o-OO	Two-coupled	Rare, early variation on switcher.
o-OO-o	Columbia	Not popular passenger locomotive.
o-OOO-o	Prairie	Popular on Santa Fe Railroad for general service.
o-OOO	Mogul	Popular branch line locomotive.
o-OOOO	Consolidation	Most popular locomotive type constructed, usually for freight.
o-OOOOO	Decapod	Powerful freight locomotive for drag service.
o-OOOOO-o	Santa Fe	Popular heavy weight drag locomotive.
o-OOOOO-oo	Texas	Popular heavy weight drag locomotive.
o-OOO-OOO-o	Mallet Compound	Pronounced "mal-lay"
o-OOO-OOO-oo	Class "A"	Highly advanced N&W loco. One in preservation.
o-OOO-OOO-ooo	Allegheny	C&O locomotive capable of 70mph freights and long coal drags. Rival of "Big Boy" class for size, two in preservation.
o-OOOO-OOOO-oo	Yellowstone	DM&IR hauled iron ore drags.
ooOO	American	Early road locomotive from Civil War through 1900's.
ooOOO	Ten-wheeler	Popular passenger locomotive through the twentieth century.
ooOOOO	Mastodon	Most popular on Norfolk and Western branch lines.
ooOOo	Atlantic	Light weight, high speed passenger locomotive.
ooOOoo	Jubilee	Light, high speed loco, more popular in Canada.
ooOOOo	Pacific	High speed passenger locomotive, popular throughout America.
ooOOOoo	Hudson	Heavier high speed loco made popular on New York Central Railroad.
ooOOOOo	Mountain	Heavy dual service locomotive.
ooOOOOoo	Northern	Most popular design. "Niagara" on some roads.
ooOOOOOo	Southern Pacific	Rare locomotive, one in preservation.
ooOOOOOOo	Union Pacific	Rare locomotive, one in preservation.
oo-OOO-OOO-oo	Challenger	
oo-OOOO-OOOO-oo	Big Boy	Largest locomotive ever built, eight in preservation.

Wheel arrangements are read in pairs, such that an American would be a "4-4-0". A Consolidation is a "2-8-0". The front set of wheels were developed to guide a locomotive into a curve or switch. They are called the "pony truck". The power wheels are called "drivers". If any wheels are found under the cab and firebox, it is called the "trailing truck".

Some wheel arrangements were given different names by railroads to effect company policy. New York Central called the 4-8-4 arrangement a "Niagara". In Mexico, the wheel arrangement was likewise called a "Niagara" to reflect being south of the border. B&O called the Hudson 4-6-4, a "Baltic".

Other popular steam locomotive designs included geared locomotives with different power drives. These unique locomotives were produced in the hundreds and named after their designers; Shay, Climax, and Heisler.

To make things even more exotic, many railroads were capable of designing, casting, machining, and reproducing their own locomotive designs in quantity. The Pennsylvania could knock out experimental designs, test them, and reproduce fleets for various purposes. Norfolk & Western, Pennsylvania, and Chesapeake & Ohio railroads notably produced several steam turbines in response to the advent of the Diesel Electric. None of the turbine designs were preserved.